GenCore version 5.1.3

OM protein - protein search, using sw model

Run on: November 30, 2002, 12:31:03 ; Search time 27 Seconds
(without alignments)
2482.410 Million cell updates/sec

Title: US-10-025-514-8
Perfect score: 2675
Sequence: 1 MSGKSFKAGVCPPKKSAQCL.....IEQNTKSPLFMGKVVNPTQK 503

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_101002:*
1: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
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23: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	2675	100.0	503	23	AAU99881	SLAP1 fusion prote
2	2052.5	76.7	418	5	AAP40133	Sequence of human
3	2052.5	76.7	418	10	AAP94664	Predominant form o
4	2052.5	76.7	418	20	AAY26925	Human alpha1-anti-
5	2045.5	76.5	580	23	AAU99882	TAP1 fusion protei
6	2043.5	76.4	418	16	AAR71969	Human alpha-1-tryp
7	2043.5	76.4	418	19	AAW56709	Amino acid sequenc
8	2043.5	76.4	418	21	AAY78890	Human alpha1-antit
9	2042.5	76.4	417	21	AAB36101	Human alpha1-prote
10	2042.5	76.4	417	21	AAB26705	Human alpha1-antit
11	2040.5	76.3	418	10	AAP90128	Sequence encoded b
12	2035	76.1	503	23	AAU99884	rSLAP1 fusion prot
13	2035	76.1	522	23	AAU99883	NTAP1 fusion prote
14	2035	76.1	522	23	AAU99885	rN-TAP1 fusion pro
15	2035	76.1	580	23	AAU99889	rTAP1 fusion prote
16	2032.5	76.0	418	6	AAP50021	Sequence of alpha-
17	2032.5	76.0	418	13	AAR22931	Alpha-1 antitrypsi
18	2030.5	75.9	418	6	AAP50577	Sequence of human
19	2030	75.9	394	19	AAW59839	Mature protein seq
20	2030	75.9	394	23	AAU99873	Human alpha-1-anti
21	2028.5	75.8	418	6	AAP50877	Sequence encoded b
22	2022	75.6	393	13	AAR20802	Alpha-1-antitrypsi
23	2019	75.5	394	16	AAR67360	Human alpha-1-anti
24	2017.5	75.4	414	21	AAB26296	Human alpha1-antit
25	2017.5	75.4	414	21	AAB26324	Human alpha1-antit
26	2011	75.2	394	7	AAP61712	[Leu358] alpha1-an
27	2011	75.2	394	11	AAR03754	Entire sequence of
28	2010	75.1	394	7	AAP61710	[Ile358] alpha1-an
29	2010	75.1	394	7	AAP61711	[Ile358] alpha1-an
30	2009	75.1	394	7	AAP61713	[Phe358] alpha1-an
31	2009	75.1	394	16	AAR67362	Alpha-1-antitrypsi
32	2008	75.1	394	7	AAP61709	[Ala358] alpha1-an
33	2008	75.1	394	7	AAP60512	[Arg358] alpha1-an
34	2008	75.1	394	20	AAY44205	Alpha-1 antitrypsi
35	2006	75.0	394	7	AAP61708	[Gly358] alpha1-an
36	2005	75.0	394	16	AAR67363	Alpha-1-antitrypsi
37	2003	74.9	394	20	AAY44201	Alpha-1 antitrypsi
38	1991.5	74.4	448	6	AAP50132	Sequence of the pr
39	1979	74.0	394	16	AAR67361	Alpha-1-antitrypsi
40	1917.5	71.7	399	11	AAR04033	GAPDH promotor fra
41	1904	71.2	669	23	ABB77831	Sequence of fusion
42	1689	63.1	418	10	AAP94665	Human alpha-1-anti
43	1682	62.9	418	5	AAP40134	Sequence of human
44	1664	62.2	395	9	AAP83189	[Ala357, Arg358] A
45	1646	61.5	390	9	AAP83190	[delta 1-5][Arg358

ALIGNMENTS

```
RESULT 1
AAU99881
ID   AAU99881 standard; Protein; 503 AA.
XX
AC   AAU99881;
XX
DT   07-OCT-2002  (first entry)
XX
DE   SLAP1 fusion protein.
XX
KW   Alzheimer's disease; SLAP1; fusionprotein;
KW   malaria; emphysema; asthma; chronic obstructive pulmonary disease;
KW   cystic fibrosis; otitis media; otitis external; HIV; psoriasis; eczema;
KW   human immunodeficiency virus; atopic dermatitis; muscular dystrophy;
KW   herpes; ulceration; sepsis; rheumatoid arthritis; periodontal disease;
KW   tumour metastasis; tumour angiogenesis; osteoporosis; Paget's disease;
KW   glomerulonephritis; scleroderma; hypertension.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          2..108
FT                   /note= "Amino acids 1-107 of SLPI"
FT   Region          109
FT                   /note= "Linker amino acid"
FT   Region          110..503
FT                   /note= "Amino acids 1-394 of human AAT protein"
XX
PN   WO200250287-A2.
XX
PD   27-JUN-2002.
XX
```

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PF   18-DEC-2001; 2001WO-US49256.
XX
PR   18-DEC-2000; 2000US-256699P.
PR   20-NOV-2001; 2001US-331966P.
XX
PA   (ARRI-) ARRIVA PHARM INC.
XX
PI   Barr PJ,  Gibson HL,  Pemberton P;
XX
DR   WPI; 2002-500631/53.
DR   N-PSDB; ABK88022.
XX
PT   Novel fusion protein useful for inhibiting protease activity associated
PT   with a disorder such as emphysema, asthma, comprises a first protease
PT   inhibitor comprising alpha 1-antitrypsin and a second protease
PT   inhibitor -
XX
PS   Example 1; Page 74-76; 134pp; English.
XX
CC   This invention relates to a novel fusion protein comprising a first
CC   protease inhibitor comprising an alpha1-antitrypsin or its functionally
CC   active portion and a second protease inhibitor or its functionally
CC   active protein. The fusion proteins of the invention may act as an
CC   inhibitor of protease activity. The fusion protein of the invention
CC   is useful for inhibiting protease activity associated with a disorder
CC   such as emphysema, asthma, chronic obstructive pulmonary disease,
CC   cystic fibrosis, otitis media, otitis external or HIV infection, or
CC   for treating an individual suffering from or at risk for a disease or
CC   disorder involving unwanted protease activity. The proteins are useful
CC   for treating dermatological diseases such as atopic dermatitis, eczema
CC   and psoriasis, in inflammatory responses to viral infection, and for
CC   treating herpes infection, corneal or epidermal ulceration, chronic
CC   non-healing wounds, sepsis, rheumatoid arthritis, periodontal disease,
CC   tumour metastasis and tumour angiogenesis, gastric ulceration,
CC   osteoporosis, Paget's disease, glomerulonephritis, scleroderma, malaria,
CC   bacterial infection, Alzheimer's disease, hypertension and muscular
CC   dystrophy. The present sequence represents the SLAP1 fusion protein of
CC   the invention.
XX
SQ   Sequence   503 AA;

  Query Match             100.0%;  Score 2675;  DB 23;  Length 503;
  Best Local Similarity   100.0%;  Pred. No. 1.4e-198;
  Matches  503;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MSGKSFKAGVCPPKKSAQCLRYKKPECQSDWQCPGKKRCCPDTCGIKCLDPVDTPNPTRR 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MSGKSFKAGVCPPKKSAQCLRYKKPECQSDWQCPGKKRCCPDTCGIKCLDPVDTPNPTRR 60

Qy      61 KPGKCPVTYGQCLMLNPPNFCEMDGQCKRDLKCCMGMCGKSCVSPVKAMEDPQGDAAQKT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 KPGKCPVTYGQCLMLNPPNFCEMDGQCKRDLKCCMGMCGKSCVSPVKAMEDPQGDAAQKT 120

Qy     121 DTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIATAFAMLSLGTKAD 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 DTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIATAFAMLSLGTKAD 180

Qy     181 THDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLFLSEGLKLVDKFL 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 THDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLFLSEGLKLVDKFL 240

Qy     241 EDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRDTVFALVNYIFFK 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 EDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRDTVFALVNYIFFK 300

Qy     301 GKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWVLLMKYLGNATAI 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 GKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWVLLMKYLGNATAI 360

Qy     361 FFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDLKSVLGQLGITKV 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     361 FFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDLKSVLGQLGITKV 420

Qy     421 FSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMSIPPEVKFNKPFV 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     421 FSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMSIPPEVKFNKPFV 480

Qy     481 FLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||||||||||||||||||
Db     481 FLMIEQNTKSPLFMGKVVNPTQK 503


RESULT 2
AAP40133
ID   AAP40133 standard; Protein; 418 AA.
XX
AC   AAP40133;
XX
DT   16-FEB-1992  (first entry)
XX
DE   Sequence of human alpha-1-antitrypsin.
XX
KW   Protease inhibitor; enzyme; proteolysis inhibitor; emphysema;
KW   therapy.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..24
FT                   /label= signal
FT   Region          25..418
XX
PN   EP103409-A.
XX
PD   21-MAR-1984.
XX
PF   12-AUG-1983;   83EP-0304668.
XX
PR   28-APR-1983;   83US-0489406.
PR   13-AUG-1982;   82US-0408099.
PR   18-AUG-1982;   82US-0409183.
PR   01-JAN-1988;   88EP-0201179.
XX
PA   (ZYMO-) ZYMOS CORP.
PA   (BRIG-) BRIGHAM & WOMENS HO.
PA   (KAWA/) KAWASAKI.
XX
PI   Kawasaki GH,  Woodbury RG;
XX
DR   WPI; 1984-077108/13.
DR   N-PSDB; AAN40078.
XX
PT   Extra:chromosomal element for replication in yeast - with yeast
PT   promoter for regulation of glycolytic protein prodn.
XX
PS   Disclosure; Fig 1A; 48pp; English.
XX
CC   The inventors claim a DNA construct contg. a gene encoding human
CC   alpha-1-antitrypsin. A substantially pure, substantially
CC   unglycosylated mammalian alpha-1-antitrypsin is also claimed.
XX
SQ   Sequence   418 AA;

  Query Match             76.7%;  Score 2052.5;  DB 5;  Length 418;
  Best Local Similarity   97.8%;  Pred. No. 1.7e-150;
  Matches  399;  Conservative    2;  Mismatches    4;  Indels    3;  Gaps    1;

Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||   ||||||||||||||||||||||||||||||||||||||||||||||
Db      14 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 70

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      71 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 130

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
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                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     131 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 190

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     191 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 250

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     251 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 310

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     311 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 370

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||||||||||||||||||||||||||||||||||||||||||||
Db     371 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 418


RESULT 3
AAP94664
ID   AAP94664 standard; protein; 418 AA.
XX
AC   AAP94664;
XX
DT   28-JUN-1990  (first entry)
XX
DE   Predominant form of human alpha-1-antitrypsin as encoded by cDNA.
XX
KW   Human alpha-1-trypsin (hAT); anti-AT antibodies; proteolytic activity;
KW   AT deficiency; Saccharomyces cerevisiae GK 100; 2-mu plasmid DNA; CATI;
KW   plasmid HAT4; yeast TPI promoter; yeast TPI terminator;
KW   plasmid C1/1.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..118
FT   Protein         119..418
XX
PN   EP304971-A.
XX
PD   01-MAR-1989.
XX
PF   12-AUG-1983;   83EP-0201179.
XX
PR   13-AUG-1982;   82EP-0201179, US-408099.
XX
PA   (ZYMO ) ZYMOGENETICS INC.
XX
PI   Kawasaki GH,  Woodbury RG;
XX
DR   WPI; 1989-062651/09.
DR   N-PSDB; AAN91077.
XX
PT   New alpha-1-antitrypsin polypeptide(s) -
PT   produced by recombinant DNA techniques esp. using yeast host
XX
PS   Disclosure;  ; 28pp; English.
XX
CC   New in the patent are unglycosylated polypeptides having the amino acid
CC   sequence of a mammalian alpha-1-antitrypsin (AT).  Also claimed is the
CC   prodn. of polypeptides having the protease-inhibiting activity of a
CC   mammalian AT.  A culture of microorganisms is grown such as fungi or
CC   yeast, esp. Saccharomyces cerevisiae GK 100, which are transformed with
CC   a DNA transfer vector 2-mu plasmid, plasmid CATI or plasmid HAT4, contg.
CC   a segment encoding the mammalian AT.  The unglycosylated polypeptides are
CC   useful for prodn. of anti-AT antibodies, for modulating proteolytic
CC   activity in mammals, and for treating AT deficiency, esp. for replacing
CC   AT which has been inactivated (oxidised) by tobacco or other smoke.  In
CC   the given example plasmid HAT4 comprises the yeast promoter, an
CC   ATGGAGGATCC adapter, the hAT gene and the yeast TPI terminator inserted
CC   into plasmid C1/1, which contains the entire 2-mu DNA from S. cerevisiae.
CC   S. cerevisiae GK100 transformed with HAT4 produces soluble protein with
CC   an hAT content of 2-3% when grown on a medium contg. 6% glucose.
XX
SQ   Sequence   418 AA;

  Query Match             76.7%;  Score 2052.5;  DB 10;  Length 418;
  Best Local Similarity   97.8%;  Pred. No. 1.7e-150;
  Matches  399;  Conservative    2;  Mismatches    4;  Indels    3;  Gaps    1;

Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||   ||||||||||||||||||||||||||||||||||||||||||||||||
Db      14 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 70

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      71 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 130

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     131 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 190

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     191 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 250

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     251 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 310

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     311 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 370

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||||||||||||||||||||||||||||||||||||||||||||
Db     371 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 418


RESULT 4
AAY26925
ID   AAY26925 standard; Protein; 418 AA.
XX
AC   AAY26925;
XX
DT   21-DEC-1999  (first entry)
XX
DE   Human alphal-anti-trypsin type M1 protein.
XX
KW   Human; alpha-1-anti-trypsin; transgenic plant; monocotyledon; variant;
KW   glycosylation; serine protease; inhibitor; neutrophil; elastase; trypsin;
KW   cathepsin G; thrombin; pulmonary tissue; protease damage; septic shock;
KW   pulmonary emphysema; cystic fibrosis; rheumatism; recombinant;
KW   virus contamination; immunogenicity; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..24
FT                   /label= signal_peptide
FT   Protein         25..418
FT                   /label= mature protein
FT   Modified-site   70
FT                   /note= "putative glycosylation site"
FT   Modified-site   107
FT   Modified-site   271
FT   Active-site     382..387
FT                   /note= "putative active site"
XX
PN   WO9938987-A1.
XX
PD   05-AUG-1999.
XX
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PF 29-JAN-1999; 99WO-FR00195.
XX
PR 30-JAN-1998; 98FR-0001089.
XX
PA (MERI-) MERISTEM THERAPEUTICS.
XX
PI Gruber V, Olagnier B, Bournat P, Theisen M, Merot B;
XX
DR WPI; 1999-469334/39.
DR N-PSDB; AAX83548.
XX
PT Production of alpha1-antitrypsin, and its variants, in cells of
PT monocotyledonous plants, useful as serine protease inhibitors for
PT therapy, e.g. of emphysema, in cosmetics and as reagents -
XX
PS Claim 8; Fig 1; 67pp; French.
XX
CC This sequence represents the coding region of the human alpha-1-anti-
CC trypsin (AT) gene. The invention relates to the production of AT in plant
CC cells, especially monocotyledonous plants. Also produced are variants of
CC the AT protein, in which the glycosylation pattern of the protein is
CC altered. AT inhibits serine proteases, specifically neutrophil elastase
CC (but also trypsin, cathepsin G, thrombin etc.) so protect pulmonary
CC tissue against protease damage. AT are used to treat AT-deficiency
CC conditions, particularly pulmonary emphysema, cystic fibrosis, septic
CC shock and rheumatism. The use of plants for the recombinant production
CC of AT results in a product without risk of (sub)viral contamination. The
CC recombinant AT had good activity and is stable, with low immunogenicity
CC (associated with glycosylation patterns similar to the native protein).
XX
SQ Sequence 418 AA;

Query Match 76.7%; Score 2052.5; DB 20; Length 418;
Best Local Similarity 97.8%; Pred. No. 1.7e-150;
Matches 399; Conservative 2; Mismatches 4; Indels 3; Gaps 1;

```
Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||   ||||||||||||||||||||||||||||||||||||||||||||||
Db      14 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 70

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      71 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 130

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     131 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 190

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     191 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 250

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     251 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 310

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     311 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 370

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||||||||||||||||||||||||||||||||||||||||||||
Db     371 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 418
```

RESULT 5
AAU99882
ID AAU99882 standard; Protein; 580 AA.
XX
AC AAU99882;
XX
DT 07-OCT-2002 (first entry)
XX
DE TAP1 fusion protein.
XX
KW TAP1; Alzheimer's disease; tumour angiogenesis;
KW malaria; emphysema; asthma; chronic obstructive pulmonary disease;
KW cystic fibrosis; otitis media; otitis external; HIV; psoriasis; eczema;
KW human immunodeficiency virus; atopic dermatitis; muscular dystrophy;
KW herpes; ulceration; sepsis; rheumatoid arthritis; periodontal disease;
KW tumour metastasis; osteoporosis; Paget's disease; scleroderma;
KW glomerulonephritis; hypertension.
XX
OS Homo sapiens.
OS Synthetic.
XX

FH	Key	Location/Qualifiers
FT	Region	2..185
FT		/note= "Human TIMP-1 amino acids 1-184"
FT	Region	186
FT		/note= "Linker methionine"
FT	Region	187..580
FT		/note= "Amino acids 1-394 of human AAT"

XX
PN WO200250287-A2.
XX
PD 27-JUN-2002.
XX
PF 18-DEC-2001; 2001WO-US49256.
XX
PR 18-DEC-2000; 2000US-256699P.
PR 20-NOV-2001; 2001US-331966P.
XX
PA (ARRI-) ARRIVA PHARM INC.
XX
PI Barr PJ, Gibson HL, Pemberton P;
XX
DR WPI; 2002-500631/53.
DR N-PSDB; ABK88023.
XX
PT Novel fusion protein useful for inhibiting protease activity associated
PT with a disorder such as emphysema, asthma, comprises a first protease
PT inhibitor comprising alpha 1-antitrypsin and a second protease
PT inhibitor -
XX
PS Example 1; Page 79-82; 134pp; English.
XX
CC This invention relates to a novel fusion protein comprising a first
CC protease inhibitor comprising an alpha1-antitrypsin or its functionally
CC active portion and a second protease inhibitor or its functionally
CC active protein. The fusion proteins of the invention may act as an
CC inhibitor of protease activity. The fusion protein of the invention
CC is useful for inhibiting protease activity associated with a disorder
CC such as emphysema, asthma, chronic obstructive pulmonary disease,
CC cystic fibrosis, otitis media, otitis external or HIV infection, or
CC for treating an individual suffering from or at risk for a disease or
CC disorder involving unwanted protease activity. The proteins are useful
CC for treating dermatological diseases such as atopic dermatitis, eczema
CC and psoriasis, in inflammatory responses to viral infection, and for
CC treating herpes infection, corneal or epidermal ulceration, chronic
CC non-healing wounds, sepsis, rheumatoid arthritis, periodontal disease,
CC tumour metastasis and tumour angiogenesis, gastric ulceration,
CC osteoporosis, Paget's disease, glomerulonephritis, scleroderma, malaria,
CC bacterial infection, Alzheimer's disease, hypertension and muscular
CC dystrophy. The present sequence represents the TAP1 fusion protein of
CC the invention.
XX
SQ Sequence 580 AA;

Query Match 76.5%; Score 2045.5; DB 23; Length 580;
Best Local Similarity 95.9%; Pred. No. 8.9e-150;
Matches 401; Conservative 2; Mismatches 12; Indels 3; Gaps 1;

```
Qy      89 RDLKCC---MGMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFS 145
           | | |     |:|    :    ||||||||||||||||||||||||||||||||||||||
Db     163 RHLACLPREPGLCTWQSLRSQIAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFS 222
```

```
Qy    146 LYRQLAHQSNSTNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGF 205
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    223 LYRQLAHQSNSTNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGF 282

Qy    206 QELLRTLNQPDSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQ 265
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    283 QELLRTLNQPDSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQ 342

Qy    266 INDYVEKGTQGKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTV 325
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    343 INDYVEKGTQGKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTV 402

Qy    326 KVPMMKRLGMFNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFL 385
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    403 KVPMMKRLGMFNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFL 462

Qy    386 ENEDRRSASLHLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKA 445
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    463 ENEDRRSASLHLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKA 522

Qy    446 VLTIDEKGTEAAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    523 VLTIDEKGTEAAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 580
```

RESULT 6
AAR71969
ID AAR71969 standard; Protein; 418 AA.
XX
AC AAR71969;
XX
DT 18-OCT-1995 (first entry)
XX
DE Human alpha-1-trypsin.
XX
KW Alpha-1-trypsin; protease-inhibitor.
XX
OS Homo sapiens.
XX
FH Key   Location/Qualifiers
FT Peptide   1..24
FT   /label= Sig_peptide
XX
PN US5399684-A.
XX
PD 21-MAR-1995.
XX
PF 20-MAY-1982; 82US-0380310.
XX
PR 20-MAY-1982; 82US-0380310.
PR 07-FEB-1984; 84US-0638980.
PR 03-MAR-1987; 87US-0022543.
PR 15-DEC-1987; 87US-0133190.
PR 16-SEP-1988; 88US-0246912.
PR 22-AUG-1989; 89US-0398288.
PR 11-MAR-1991; 91US-0666450.
PR 18-NOV-1992; 92US-0979556.
PR 02-JUL-1993; 93US-0086442.
XX
PA (WASH-) WASHINGTON RES FOUND.
XX
PI Davie EW, Kurachi K, Thirumalachary C, Woo SLC;
XX
DR WPI; 1995-130740/17.
DR N-PSDB; AAQ89254.
XX
PT Human alphal-antitrypsin (a1-AT) cDNA sequence - can be used for
PT the expression of a1-AT
XX
PS Disclosure; Fig.1; 15pp; English.
XX
CC The sequence of human alpha-1-antitrypsin encoded by an isolated
CC cDNA clone is given in AAR71969. Expression of the cDNA in host cell
CC transformants allowed production of recombinant alpha-1-antitrypsin.
XX
SQ Sequence 418 AA;

```
  Query Match             76.4%;  Score 2043.5;  DB 16;  Length 418;
  Best Local Similarity   97.5%;  Pred. No. 8.2e-150;
  Matches  398;  Conservative    2;  Mismatches    5;  Indels    3;  Gaps    1;

Qy     96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
          |:|   |: ||   ||||||||||||||||||||||||||||||||||||||||||||||||
Db     14 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 70

Qy    156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     71 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 130

Qy    216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    131 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 190

Qy    276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    191 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 250

Qy    336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    251 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 310

Qy    396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    311 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 370

Qy    456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
          ||||||||||||||| ||||||||||||||||||||||||||||||||
Db    371 AAGAMFLEAIPMSIRPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 418
```

RESULT 7
AAW56709
ID AAW56709 standard; Protein; 418 AA.
XX
AC AAW56709;
XX
DT 21-AUG-1998 (first entry)
XX
DE Amino acid sequence of the alpha-1-antitrypsin.
XX
KW Human alpha-1-antitrypsin; ATR-1; antibody; ATR-1 deficiency.
XX
OS Homo sapiens.
XX
PN US5736379-A.
XX
PD 07-APR-1998.
XX
PF 07-JUN-1995; 95US-0479545.
XX
PR 20-MAY-1982; 82US-0380310.
PR 07-FEB-1984; 84US-0638980.
PR 03-MAR-1987; 87US-0022543.
PR 15-DEC-1987; 87US-0133190.
PR 16-SEP-1988; 88US-0246912.
PR 22-AUG-1989; 89US-0398288.
PR 11-MAR-1991; 91US-0666450.
PR 18-NOV-1992; 92US-0979556.
PR 02-JUL-1993; 93US-0086442.
PR 12-DEC-1994; 94US-0361689.
XX
PA (WASH-) WASHINGTON RES FOUND.
XX
PI Davie EW, Kurachi K, Thirumalachary C, Woo SLC;
XX

```
DR   WPI; 1998-239214/21.
DR   N-PSDB; AAV28471.
XX
PT   DNA encoding alpha-1 anti-trypsin - useful for, e.g. producing
PT   recombinant alpha-1 anti-trypsin
XX
PS   Claim 1; Fig 1; 15pp; English.
XX
CC   This is the amino acid sequence of the novel human alpha-1-antitrypsin
CC   (ATR-1) protein.  Its products are useful for producing recombinant
CC   ATR-1 polypeptides, which can be used to prepare antibodies for
CC   detecting ATR-1 variants in the blood, as ligands in assays for ATR-1,
CC   and to treat ATR-1 deficiency.
XX
SQ   Sequence   418 AA;

  Query Match             76.4%;  Score 2043.5;  DB 19;  Length 418;
  Best Local Similarity   97.5%;  Pred. No. 8.2e-150;
  Matches  398;  Conservative    2;  Mismatches    5;  Indels    3;  Gaps    1;

Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||   ||||||||||||||||||||||||||||||||||||||||||||||
Db      14 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 70

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      71 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 130

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     131 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 190

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     191 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 250

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     251 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 310

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     311 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 370

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           ||||||||||||||| ||||||||||||||||||||||||||||||||
Db     371 AAGAMFLEAIPMSIRPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 418


RESULT 8
AAY78890
ID   AAY78890 standard; Protein; 418 AA.
XX
AC   AAY78890;
XX
DT   19-MAY-2000  (first entry)
XX
DE   Human alpha1-antitrypsin amino acid sequence.
XX
KW   Alpha1-antitrypsin; neutrophil elastase inhibitor; human;
KW   chronic obstructive pulmonary emphysema; infantile liver cirrhosis.
XX
OS   Homo sapiens.
XX
PN   US6025161-A.
XX
PD   15-FEB-2000.
XX
PF   20-JAN-1998;   98US-0009581.
XX
PR   07-JUN-1995;   95US-0479545.
PR   20-MAY-1982;   82US-0380810.
PR   07-FEB-1984;   84US-0638980.
PR   03-MAR-1987;   87US-0022543.
PR   15-DEC-1987;   87US-0133190.
PR   16-SEP-1988;   88US-0246912.
PR   22-AUG-1989;   89US-0398288.
PR   11-MAR-1991;   91US-0666450.
PR   18-NOV-1992;   92US-0979556.
PR   02-JUL-1993;   93US-0086442.
XX
PA   (WASH-) WASHINGTON RES FOUND.
XX
PI   Woo SLC,  Thirumalachary C,  Kurachi K,  Davie EW;
XX
DR   WPI; 2000-181811/16.
DR   N-PSDB; AAZ90199.
XX
PT   Preparing alpha1-antitrypsin for inhibiting neutrophil elastase
PT   involves transfecting host cell with vector comprising
PT   alpha1-antitrypsin DNA sequence that hybridizes to human
PT   alpha1-antitrypsin cDNA, or its complement -
XX
PS   Claim 1; Fig 1; 16pp; English.
XX
CC   This sequence represents the human alpha1-antitrypsin amino acid
CC   sequence. Alpha1-antitrypsin is an important protease inhibitor, the
CC   major function of which is to inhibit neutrophil elastase. Low levels of
CC   alpha1-antitrypsin in the blood are associated with chronic obstructive
CC   pulmonary emphysema and infantile liver cirrhosis. A vector comprising a
CC   mammalian alpha1-antitrypsin DNA sequence that hybridises to human
CC   alpha1-antitrypsin cDNA can be introduced into a host cell in a method
CC   for the production of alpha1-antitrypsin.
XX
SQ   Sequence   418 AA;

  Query Match             76.4%;  Score 2043.5;  DB 21;  Length 418;
  Best Local Similarity   97.5%;  Pred. No. 8.2e-150;
  Matches  398;  Conservative    2;  Mismatches    5;  Indels    3;  Gaps    1;

Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||   ||||||||||||||||||||||||||||||||||||||||||||||
Db      14 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 70

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      71 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 130

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     131 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 190

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     191 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 250

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     251 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 310

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     311 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 370

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           ||||||||||||||| ||||||||||||||||||||||||||||||||
Db     371 AAGAMFLEAIPMSIRPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 418


RESULT 9
AAB36101
ID   AAB36101 standard; Peptide; 417 AA.
XX
AC   AAB36101;
XX
DT   16-FEB-2001  (first entry)
```

XX
DE Human alphal-proteinase inhibitor.
XX
KW Human; alphal-proteinase inhibitor; periodontain; antiinflammatory;
KW antibacterial; amidolytic; alpha_1-proteinase inhibitor; periodontitis;
KW gingivitis.
XX
OS Homo sapiens.
XX
PN WO200063394-A2.
XX
PD 26-OCT-2000.
XX
PF 20-APR-2000; 2000WO-US10574.
XX
PR 21-APR-1999; 99US-0130436.
XX
PA (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (TRAV/) TRAVIS J.
PA (POTE/) POTEMPA J.
PA (NELS/) NELSON D.
XX
PI Travis J, Potempa J, Nelson D;
XX
DR WPI; 2000-679600/66.
XX
PT Novel oral bacterial periodontain polypeptide for treating periodontal
PT diseases, has amidolytic activity for cleavage of non-denatured human
PT alphal-proteinase inhibitor at reactive site loop region of inhibitor
PT -
XX
PS Example 1; Fig 4; 55pp; English.
XX
CC The present sequence is given in a specification relating to novel
CC oral bacterial polypeptide referred to as periodontain. The polypeptide
CC has amidolytic activity for cleavage of denatured polypeptides and
CC non-denatured serpin polypeptides. It has amidolytic activity for
CC cleavage of a non-denatured human alpha_1-proteinase inhibitor at a
CC reactive site loop region of the inhibitor. Periodontain is useful for
CC inhibiting the peptidase activity and reducing periodontitis, loss of
CC tooth attachment and periodontal pocket formation, and for reducing
CC growth of bacteria, preferably P. gingivalis in vitro or in vivo.
CC It is useful for protecting an animal from a disease caused by
CC P. gingivalis and for treating periodontal diseases, including
CC gingivitis and periodontitis.
XX
SQ Sequence 417 AA;

Query Match 76.4%; Score 2042.5; DB 21; Length 417;
Best Local Similarity 97.3%; Pred. No. 9.8e-150;
Matches 397; Conservative 3; Mismatches 5; Indels 3; Gaps 1;

```
Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||   ||||||||||||||||||||||||||||||||||||||||||||||
Db      13 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 69

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 129

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
           |||||||||||||||||||||||||||||||||||||||| ||||||||||||||||||||
Db     130 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDHEEAKKQINDYVEKGTQ 189

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           ||||||||||||||||||||||||||||||||||:||||||||||||||||||||||||||
Db     190 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEDEDFHVDQVTTVKVPMMKRLGM 249

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 309

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 369

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||||||||||||||||||||||||||||||||||||||||||||
Db     370 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 417
```

RESULT 10
AAB26705
ID AAB26705 standard; protein; 417 AA.
XX
AC AAB26705;
XX
DT 12-JAN-2001 (first entry)
XX
DE Human alphal-antitrypsin protein sequence.
XX
KW Alphal-antitrypsin; human; serine protease inhibitor; nitric oxide; NO;
KW synthesis suppressor; tubulointerstitial disease; pancreatitis;
KW respiratory disease; AIDS; Alzheimer's disease; Parkinson's disease;
KW amyotrophic lateral sclerosis; autoimmune disease; carcinogenesis;
KW cerebral ischaemia; liver disease; lung disease; otitis media;
KW heart failure; diabetes; dysmenorrhoea; endotoxic shock; glaucoma;
KW Chinese restaurant syndrome; gastritis; hot dog headache; hypertension;
KW inflammatory disease; liver disease; migraine; multiple sclerosis;
KW neurodegenerative disease; orthopaedic disease; protozoan infection;
KW sickle cell anaemia; stroke; systemic lupus erythematosus.
XX
OS Homo sapiens.
XX
PN WO200051623-A2.
XX
PD 08-SEP-2000.
XX
PF 03-MAR-2000; 2000WO-US05556.
XX
PR 05-MAR-1999; 99US-0123167.
PR 29-SEP-1999; 99US-0156523.
XX
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX
PI Shapiro L;
XX
DR WPI; 2000-572151/53.
XX
PT Treating disease e.g. autoimmune disease and hypertension by
PT administering agent which inhibits nitric oxide synthesis and e.g.
PT alphal-antitrypsin -
XX
PS Disclosure; Page 2; 50pp; English.
XX
CC This sequence represents the human alphal-antitrypsin protein.
CC Antitrypsin is a serine protease inhibitor, and is used in the present
CC invention as a nitric oxide (NO) synthesis suppressor. The invention
CC relates to the treatment of diseases through the administration of an
CC agent (e.g. antitrypsin) that suppresses nitric oxide synthesis. The
CC method can be used in human or veterinary medicine for treating
CC tubulointerstitial disease, acute pancreatitis, acute respiratory failure
CC or distress syndrome, age associated memory impairment, AIDS, airway
CC inflammation, Alzheimer's and Parkinson's disease, amyotrophic lateral
CC sclerosis, asthma, atherosclerosis, autoimmune disease, autoimmune
CC myocarditis, carcinogenesis, cerebral ischaemic, cerebrovascular
CC accident, chronic liver disease, chronic lung disease, chronic
CC obstructive pulmonary disease, chronic otitis media, congestive heart
CC failure, coronary artery disease, coronary artery ectasia, diabetes
CC mellitus, diabetic neuropathy, dysfunctional uterine bleeding,
CC dysmenorrhoea, endotoxic shock, end stage renal disease, falciparum
CC malaria, gastric carcinogenesis, gastrointestinal pathophysiology,
CC glaucoma, glutamate induced asthma, glutamate induced Chinese restaurant
CC syndrome, heart failure, heat stress, gastritis, hot dog headache,
CC Hirschsprung's disease, hypertension, hypoxaemic respiratory failure,
CC inflammatory arthritis, inflammatory bowel disease, inflammatory joint

```
CC   diseases, liver cirrhosis, liver disease, Lyme neuroborreliosis,
CC   migraine, multiple sclerosis, myocardial infarction, neonatal and
CC   paediatric respiratory failure, nephrotoxicity, neurodegenerative
CC   diseases, orthopaedic disease, osteoarthritis, oxidant stress, paediatric
CC   pulmonary disease, pleural inflammation, preeclampsia, primary ciliary
CC   dyskinesia, primary pulmonary hypertension, protozoan infections, retinal
CC   disease, septic shock, sickle cell anaemia, rheumatoid arthritis, stroke,
CC   systemic lupus erythematosus, traumatic brain injury, tumour progression
CC   and vascular disease.
XX
SQ   Sequence   417 AA;

  Query Match             76.4%;  Score 2042.5;  DB 21;  Length 417;
  Best Local Similarity   97.3%;  Pred. No. 9.8e-150;
  Matches  397;  Conservative    3;  Mismatches    5;  Indels    3;  Gaps    1;

Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||  ||||||||||||||||||||||||||||||||||||||||||||||||
Db      13 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 69

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 129

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
           ||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||||
Db     130 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDHEEAKKQINDYVEKGTQ 189

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           |||||||||||||||||||||||||||||||||||:||||||||||||||||||||||||
Db     190 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEDEDFHVDQVTTVKVPMMKRLGM 249

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 309

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 369

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||||||||||||||||||||||||||||||||||||||||||||
Db     370 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 417


RESULT 11
AAP90128
ID   AAP90128 standard; Protein; 418 AA.
XX
AC   AAP90128;
XX
DT   30-MAR-1992  (first entry)
XX
DE   Sequence encoded by alpha-1-antitrypsin (AT) cDNA.
XX
KW   Emphysema; lung disorder; therapy; pulmonary disease;
KW   respiratory distress syndrome; cystic fibrosis.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..24
FT                   /label= signal
XX
PN   US4839283-A.
XX
PD   13-JUN-1989.
XX
PF   30-DEC-1986;   86US-0946640.
XX
PR   30-DEC-1986;   86US-0946640.
XX
PA   (ZYMO-) ZYMOGENETICS INC.
XX
PI   Kawasaki GH,  Woodbury R;
XX
DR   WPI; 1989-220174/30.
DR   N-PSDB; AAN90341, AAN97127.
XX
PT   Prepn. of polypeptide with human alpha-1-antitrypsin activity -
PT   for treating emphysema, chronic obstructive pulmonary disease or
PT   adult respiratory distress syndrome
XX
PS   Disclosure; Fig 1A and Fig 1B; 13pp; English.
XX
CC   The inventors claim a method for the prodn. in yeast of recombinant
CC   human AT. The prefd. plasmid is HAT4 which has the TPI promoter,
CC   ATGGAGGATCC adaptor, human AT gene (from the BamHI site) and TPI
CC   terminator inserted into C1/1. The recombinant AT may be useful for
CC   treatment of a genetic AT deficiency and other diseased states
CC   related to inadequate levels of AT; dosage is pref. 0.5-10.0 g/week
CC   (i.v.).
XX
SQ   Sequence   418 AA;

  Query Match             76.3%;  Score 2040.5;  DB 10;  Length 418;
  Best Local Similarity   96.8%;  Pred. No. 1.4e-149;
  Matches  395;  Conservative    6;  Mismatches    4;  Indels    3;  Gaps    1;

Qy      96 GMCGKSCVSPVKAMEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSN 155
           |:|   |: ||  ||||||||||||||||||||||||||:|||||||||||||||||||
Db      14 GLC---CLVPVSLAEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAQFAFSLYRQLAHQSN 70

Qy     156 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 215
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      71 STNIFFSPVSIATAFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQP 130

Qy     216 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 275
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     131 DSQLQLTTGNGLFLSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQ 190

Qy     276 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGM 335
           |||||||||||||||||||||||||||||||:|||:||||||||||||||||||||||||
Db     191 GKIVDLVKELDRDTVFALVNYIFFKGKWERPFELKDTDEEDFHVDQVTTVKVPMMKRLGM 250

Qy     336 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 395
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     251 FNIQHCKKLSSWVLLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASL 310

Qy     396 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 455
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     311 HLPKLSITGTYDLKSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTE 370

Qy     456 AAGAMFLEAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||:|||||||||||||||||||||||||||||||||||||||||
Db     371 AAGAMFLDAIPMSIPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 418


RESULT 12
AAU99884
ID   AAU99884 standard; Protein; 503 AA.
XX
AC   AAU99884;
XX
DT   07-OCT-2002  (first entry)
XX
DE   rSLAP1 fusion protein.
XX
KW   rSLAP1; Alzheimer's disease; tumour angiogenesis;
KW   malaria; emphysema; asthma; chronic obstructive pulmonary disease;
KW   cystic fibrosis; otitis media; otitis external; HIV; psoriasis; eczema;
KW   human immunodeficiency virus; atopic dermatitis; muscular dystrophy;
KW   herpes; ulceration; sepsis; rheumatoid arthritis; periodontal disease;
KW   tumour metastasis; osteoporosis; Paget's disease; scleroderma;
KW   glomerulonephritis; hypertension.
XX
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OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          2..395
FT                   /note= "Human AAT amino acids 1-394"
FT   Region          396
FT                   /note= "Linker methionine"
FT   Region          397..503
FT                   /note= "Amino acids 1-107 of human AAT"
XX
PN   WO200250287-A2.
XX
PD   27-JUN-2002.
XX
PF   18-DEC-2001; 2001WO-US49256.
XX
PR   18-DEC-2000; 2000US-256699P.
PR   20-NOV-2001; 2001US-331966P.
XX
PA   (ARRI-) ARRIVA PHARM INC.
XX
PI   Barr PJ,  Gibson HL,  Pemberton P;
XX
DR   WPI; 2002-500631/53.
DR   N-PSDB; ABK88025.
XX
PT   Novel fusion protein useful for inhibiting protease activity associated
PT   with a disorder such as emphysema, asthma, comprises a first protease
PT   inhibitor comprising alpha 1-antitrypsin and a second protease
PT   inhibitor -
XX
PS   Example 3; Page 90-91; 134pp; English.
XX
CC   This invention relates to a novel fusion protein comprising a first
CC   protease inhibitor comprising an alphal-antitrypsin or its functionally
CC   active portion and a second protease inhibitor or its functionally
CC   active protein. The fusion proteins of the invention may act as an
CC   inhibitor of protease activity. The fusion protein of the invention
CC   is useful for inhibiting protease activity associated with a disorder
CC   such as emphysema, asthma, chronic obstructive pulmonary disease,
CC   cystic fibrosis, otitis media, otitis external or HIV infection, or
CC   for treating an individual suffering from or at risk for a disease or
CC   disorder involving unwanted protease activity. The proteins are useful
CC   for treating dermatological diseases such as atopic dermatitis, eczema
CC   and psoriasis, in inflammatory responses to viral infection, and for
CC   treating herpes infection, corneal or epidermal ulceration, chronic
CC   non-healing wounds, sepsis, rheumatoid arthritis, periodontal disease,
CC   tumour metastasis and tumour angiogenesis, gastric ulceration,
CC   osteoporosis, Paget's disease, glomerulonephritis, scleroderma, malaria,
CC   bacterial infection, Alzheimer's disease, hypertension and muscular
CC   dystrophy. The present sequence represents the rSLAP1 fusion protein of
CC   the invention.
XX
SQ   Sequence   503 AA;

  Query Match             76.1%;  Score 2035;  DB 23;  Length 503;
  Best Local Similarity   100.0%;  Pred. No. 4.8e-149;
  Matches  395;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy     109 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 168
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 60

Qy     169 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 228
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 120

Qy     229 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 288
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 180

Qy     289 TVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWV 348
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 TVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWV 240

Qy     349 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 408
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 300

Qy     409 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 468
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 360

Qy     469 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
           |||||||||||||||||||||||||||||||||||
Db     361 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 395


RESULT 13
AAU99883
ID   AAU99883 standard; Protein; 522 AA.
XX
AC   AAU99883;
XX
DT   07-OCT-2002  (first entry)
XX
DE   NTAP1 fusion protein.
XX
KW   NTAP1; Alzheimer's disease; tumour angiogenesis;
KW   malaria; emphysema; asthma; chronic obstructive pulmonary disease;
KW   cystic fibrosis; otitis media; otitis external; HIV; psoriasis; eczema;
KW   human immunodeficiency virus; atopic dermatitis; muscular dystrophy;
KW   herpes; ulceration; sepsis; rheumatoid arthritis; periodontal disease;
KW   tumour metastasis; osteoporosis; Paget's disease; scleroderma;
KW   glomerulonephritis; hypertension.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          2..127
FT                   /note= "Human TIMP-1 amino acids 1-184"
FT   Region          128
FT                   /note= "Linker methionine"
FT   Region          129..522
FT                   /note= "Amino acids 1-394 of human AAT"
XX
PN   WO200250287-A2.
XX
PD   27-JUN-2002.
XX
PF   18-DEC-2001; 2001WO-US49256.
XX
PR   18-DEC-2000; 2000US-256699P.
PR   20-NOV-2001; 2001US-331966P.
XX
PA   (ARRI-) ARRIVA PHARM INC.
XX
PI   Barr PJ,  Gibson HL,  Pemberton P;
XX
DR   WPI; 2002-500631/53.
DR   N-PSDB; ABK88024.
XX
PT   Novel fusion protein useful for inhibiting protease activity associated
PT   with a disorder such as emphysema, asthma, comprises a first protease
PT   inhibitor comprising alpha 1-antitrypsin and a second protease
PT   inhibitor -
XX
PS   Example 2; Page 87; 134pp; English.
XX
CC   This invention relates to a novel fusion protein comprising a first
CC   protease inhibitor comprising an alphal-antitrypsin or its functionally
CC   active portion and a second protease inhibitor or its functionally
CC   active protein. The fusion proteins of the invention may act as an
CC   inhibitor of protease activity. The fusion protein of the invention
```

CC is useful for inhibiting protease activity associated with a disorder
CC such as emphysema, asthma, chronic obstructive pulmonary disease,
CC cystic fibrosis, otitis media, otitis external or HIV infection, or
CC for treating an individual suffering from or at risk for a disease or
CC disorder involving unwanted protease activity. The proteins are useful
CC for treating dermatological diseases such as atopic dermatitis, eczema
CC and psoriasis, in inflammatory responses to viral infection, and for
CC treating herpes infection, corneal or epidermal ulceration, chronic
CC non-healing wounds, sepsis, rheumatoid arthritis, periodontal disease,
CC tumour metastasis and tumour angiogenesis, gastric ulceration,
CC osteoporosis, Paget's disease, glomerulonephritis, scleroderma, malaria,
CC bacterial infection, Alzheimer's disease, hypertension and muscular
CC dystrophy. The present sequence represents the NTAP1 fusion protein of
CC the invention.
XX
SQ Sequence 522 AA;

Query Match 76.1%; Score 2035; DB 23; Length 522;
Best Local Similarity 100.0%; Pred. No. 5e-149;
Matches 395; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy    109 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 168
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    128 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 187

Qy    169 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 228
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    188 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 247

Qy    229 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 288
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    248 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 307

Qy    289 TVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWV 348
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    308 TVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWV 367

Qy    349 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 408
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    368 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 427

Qy    409 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 468
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    428 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 487

Qy    469 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
          ||||||||||||||||||||||||||||||||||||
Db    488 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 522
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RESULT 14
AAU99885
ID AAU99885 standard; Protein; 522 AA.
XX
AC AAU99885;
XX
DT 07-OCT-2002 (first entry)
XX
DE rN-TAP1 fusion protein.
XX
KW rN-TAP1; Alzheimer's disease; tumour angiogenesis;
KW malaria; emphysema; asthma; chronic obstructive pulmonary disease;
KW cystic fibrosis; otitis media; otitis external; HIV; psoriasis; eczema;
KW human immunodeficiency virus; atopic dermatitis; muscular dystrophy;
KW herpes; ulceration; sepsis; rheumatoid arthritis; periodontal disease;
KW tumour metastasis; osteoporosis; Paget's disease; scleroderma;
KW glomerulonephritis; hypertension.
XX
OS Homo sapiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Region 2..395
FT /note= "Human AAT amino acids 1-394"
FT Region 396
FT /note= "Linker methionine"
FT Region 397..522
FT /note= "Amino acids 1-126 of human TIMP-1"
FT
XX
PN WO200250287-A2.
XX
PD 27-JUN-2002.
XX
PF 18-DEC-2001; 2001WO-US49256.
XX
PR 18-DEC-2000; 2000US-256699P.
PR 20-NOV-2001; 2001US-331966P.
XX
PA (ARRI-) ARRIVA PHARM INC.
XX
PI Barr PJ, Gibson HL, Pemberton P;
XX
DR WPI; 2002-500631/53.
DR N-PSDB; ABK88027.
XX
PT Novel fusion protein useful for inhibiting protease activity associated
PT with a disorder such as emphysema, asthma, comprises a first protease
PT inhibitor comprising alpha 1-antitrypsin and a second protease
PT inhibitor -
XX
PS Example 3; Page 97; 134pp; English.
XX
CC This invention relates to a novel fusion protein comprising a first
CC protease inhibitor comprising an alphal-antitrypsin or its functionally
CC active portion and a second protease inhibitor or its functionally
CC active protein. The fusion proteins of the invention may act as an
CC inhibitor of protease activity. The fusion protein of the invention
CC is useful for inhibiting protease activity associated with a disorder
CC such as emphysema, asthma, chronic obstructive pulmonary disease,
CC cystic fibrosis, otitis media, otitis external or HIV infection, or
CC for treating an individual suffering from or at risk for a disease or
CC disorder involving unwanted protease activity. The proteins are useful
CC for treating dermatological diseases such as atopic dermatitis, eczema
CC and psoriasis, in inflammatory responses to viral infection, and for
CC treating herpes infection, corneal or epidermal ulceration, chronic
CC non-healing wounds, sepsis, rheumatoid arthritis, periodontal disease,
CC tumour metastasis and tumour angiogenesis, gastric ulceration,
CC osteoporosis, Paget's disease, glomerulonephritis, scleroderma, malaria,
CC bacterial infection, Alzheimer's disease, hypertension and muscular
CC dystrophy. The present sequence represents the rN-TAP1 fusion protein of
CC the invention.
XX
SQ Sequence 522 AA;

Query Match 76.1%; Score 2035; DB 23; Length 522;
Best Local Similarity 100.0%; Pred. No. 5e-149;
Matches 395; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy    109 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 168
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 60

Qy    169 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 228
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 120

Qy    229 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 288
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 180

Qy    289 TVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWV 348
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 TVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWV 240

Qy    349 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 408
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db    241 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 300

Qy    409 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 468
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Db    301 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 360

Qy    469 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
          |||||||||||||||||||||||||||||||||||
Db    361 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 395


RESULT 15
AAU99889
ID   AAU99889 standard; Protein; 580 AA.
XX
AC   AAU99889;
XX
DT   07-OCT-2002  (first entry)
XX
DE   rTAP1 fusion protein.
XX
KW   rTAP1; Alzheimer's disease; tumour angiogenesis;
KW   malaria; emphysema; asthma; chronic obstructive pulmonary disease;
KW   cystic fibrosis; otitis media; otitis external; HIV; psoriasis; eczema;
KW   human immunodeficiency virus; atopic dermatitis; muscular dystrophy;
KW   herpes; ulceration; sepsis; rheumatoid arthritis; periodontal disease;
KW   tumour metastasis; osteoporosis; Paget's disease; scleroderma;
KW   glomerulonephritis; hypertension.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          2..395
FT                   /note= "Human AAT amino acids 1-394"
FT   Region          396
FT                   /note= "Linker methionine"
FT   Region          397..580
FT                   /note= "Amino acids 1-184 of human TIMP-1"
XX
PN   WO200250287-A2.
XX
PD   27-JUN-2002.
XX
PF   18-DEC-2001; 2001WO-US49256.
XX
PR   18-DEC-2000; 2000US-256699P.
PR   20-NOV-2001; 2001US-331966P.
XX
PA   (ARRI-) ARRIVA PHARM INC.
XX
PI   Barr PJ,  Gibson HL,  Pemberton P;
XX
DR   WPI; 2002-500631/53.
DR   N-PSDB; ABK88026.
XX
PT   Novel fusion protein useful for inhibiting protease activity associated
PT   with a disorder such as emphysema, asthma, comprises a first protease
PT   inhibitor comprising alpha 1-antitrypsin and a second protease
PT   inhibitor -
XX
PS   Example 3; Page 94; 134pp; English.
XX
CC   This invention relates to a novel fusion protein comprising a first
CC   protease inhibitor comprising an alphal-antitrypsin or its functionally
CC   active portion and a second protease inhibitor or its functionally
CC   active protein. The fusion proteins of the invention may act as an
CC   inhibitor of protease activity. The fusion protein of the invention
CC   is useful for inhibiting protease activity associated with a disorder
CC   such as emphysema, asthma, chronic obstructive pulmonary disease,
CC   cystic fibrosis, otitis media, otitis external or HIV infection, or
CC   for treating an individual suffering from or at risk for a disease or
CC   disorder involving unwanted protease activity. The proteins are useful
CC   for treating dermatological diseases such as atopic dermatitis, eczema
CC   and psoriasis, in inflammatory responses to viral infection, and for
CC   treating herpes infection, corneal or epidermal ulceration, chronic
CC   non-healing wounds, sepsis, rheumatoid arthritis, periodontal disease,
CC   tumour metastasis and tumour angiogenesis, gastric ulceration,
CC   osteoporosis, Paget's disease, glomerulonephritis, scleroderma, malaria,
CC   bacterial infection, Alzheimer's disease, hypertension and muscular
CC   dystrophy. The present sequence represents the rTAP1 fusion protein of
CC   the invention.
XX
SQ   Sequence   580 AA;

  Query Match             76.1%;  Score 2035;  DB 23;  Length 580;
  Best Local Similarity   100.0%;  Pred. No. 5.8e-149;
  Matches  395;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    109 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 168
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MEDPQGDAAQKTDTSHHDQDHPTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIAT 60

Qy    169 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 228
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 AFAMLSLGTKADTHDEILEGLNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLF 120

Qy    229 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 288
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Db    121 LSEGLKLVDKFLEDVKKLYHSEAFTVNFGDTEEAKKQINDYVEKGTQGKIVDLVKELDRD 180

Qy    289 TVFALVNYIFFKGKWERPFEVKDTEEEDFHVDQVTTVKVPMMKRLGMFNIQHCKKLSSWV 348
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Qy    349 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 408
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Db    241 LLMKYLGNATAIFFLPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDL 300

Qy    409 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 468
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 KSVLGQLGITKVFSNGADLSGVTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMS 360

Qy    469 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 503
          |||||||||||||||||||||||||||||||||||
Db    361 IPPEVKFNKPFVFLMIEQNTKSPLFMGKVVNPTQK 395


Search completed: November 30, 2002, 12:34:58
Job time : 29 secs
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